

**Attendance Problems**

Term	Definition
1. _____ Equilateral	<b>A)</b> The distance from the center of a regular polygon to a side of the polygon. <b>B)</b> A quadrilateral with four right angles. <b>C)</b> A quadrilateral with two pairs of parallel sides <b>D)</b> Having all sides congruent <b>E)</b> A figure made up of simple shapes, such as triangles, rectangles, trapezoids, and circles
2. _____ Parallelogram	
3. _____ Apothem	
4. _____ Composite Figure	

5. Find the area  $\odot P$  with center  $P(2, 3)$  that passes through the point  $Q(-6, 3)$ .

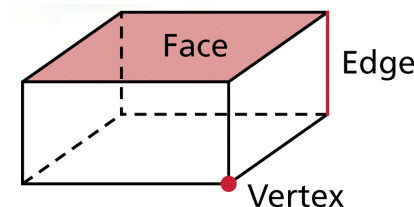
- I can classify three-dimensional figures according to their properties.
- I can use nets and cross sections to analyze three-dimensional figures.

**Common Core**

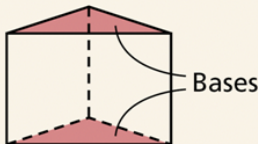
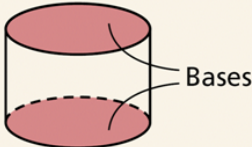
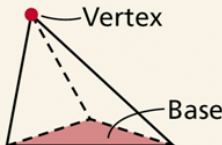
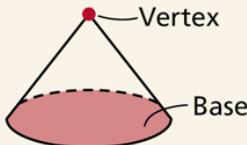
**CC.9-12.G.GMD.4** Identify the shapes of two-dimensional cross-sections of three-dimensional objects, and identify three-dimensional objects generated by rotations of two-dimensional objects.

**CC.9-12.G.MG.3** Apply geometric methods to solve design problems.

6. Compare and contrast face, vertex and edge of a solid.



**Three-Dimensional Figures**

TERM	EXAMPLE
A <b>prism</b> is formed by two parallel congruent polygonal faces called <i>bases</i> connected by faces that are parallelograms.	
A <b>cylinder</b> is formed by two parallel congruent circular bases and a curved surface that connects the bases.	
A <b>pyramid</b> is formed by a polygonal base and triangular faces that meet at a common vertex.	
A <b>cone</b> is formed by a circular base and a curved surface that connects the base to a vertex.	

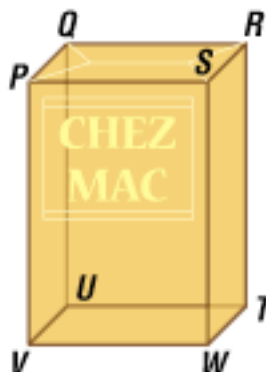
7. What is cube?

**Video Example 1.** Classify the figure. Name the vertices, edges, and bases.

A)



B)

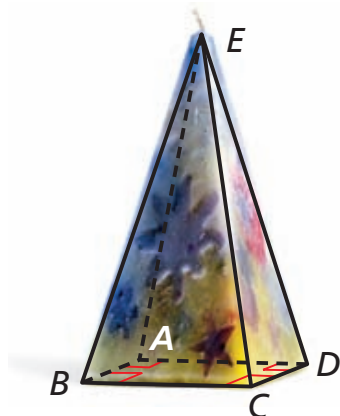


1

## Classifying Three-Dimensional Figures

Classify each figure. Name the vertices, edges, and bases.

A



rectangular pyramid

vertices:  $A, B, C, D, E$

edges:  $\overline{AB}, \overline{BC}, \overline{CD}, \overline{AD}, \overline{AE},$   
 $\overline{BE}, \overline{CE}, \overline{DE}$

base: rectangle  $ABCD$

B



cylinder

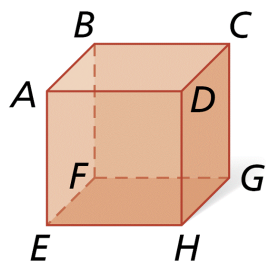
vertices: none

edges: none

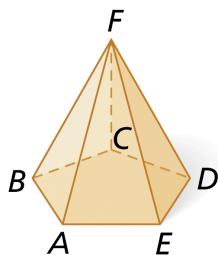
bases:  $\odot P$  and  $\odot Q$

**Example 1.** Classify the figure. Name the vertices, edges, and bases

A.

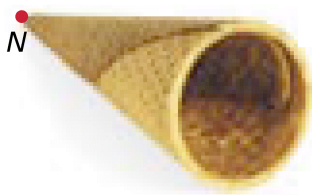


B.



**Guided Practice.** Classify the figure. Name the vertices, edges, and bases.

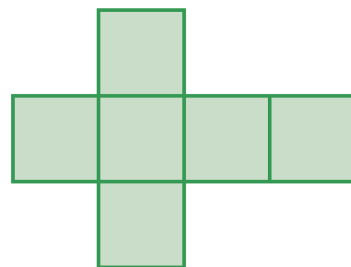
8.



9.



10. What is the net of figure?



**Video Example 2.** Describe the three-dimensional figure that can be made from the given net.

A)



B)

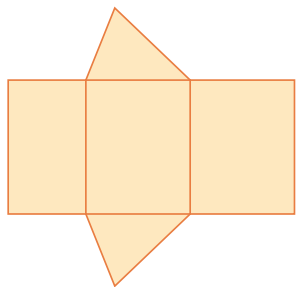


**2**

## Identifying a Three-Dimensional Figure From a Net

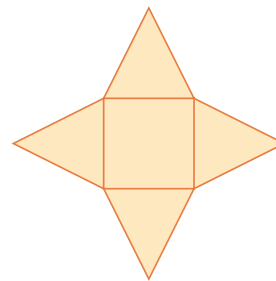
Describe the three-dimensional figure that can be made from the given net.

**A**



The net has two congruent triangular faces. The remaining faces are parallelograms, so the net forms a triangular prism.

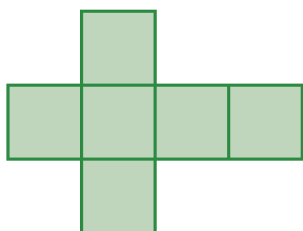
**B**



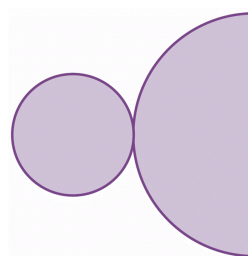
The net has one square face. The remaining faces are triangles, so the net forms a square pyramid.

**Example 2.** Describe the three-dimensional figure that can be made from the given net.

A.

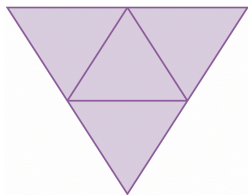


B.

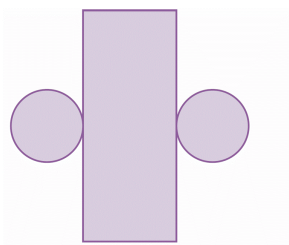


**Guided Practice.** Describe the three-dimensional figure that can be made from the given net.

11.



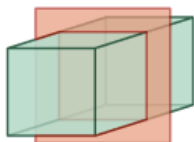
12.



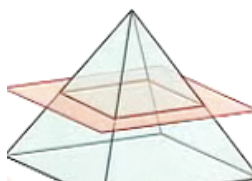
14. What is a cross section?

**Video Example 3.** Describe the cross section.

A)



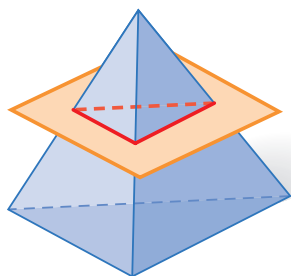
B)



### 3 Describing Cross Sections of Three-Dimensional Figures

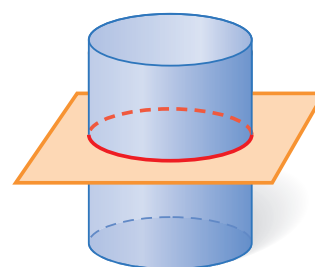
Describe each cross section.

**A**



The cross section is a triangle.

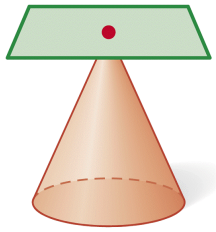
**B**



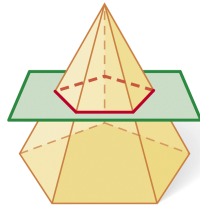
The cross section is a circle.

**Example 3.** Describe the cross section.

A.

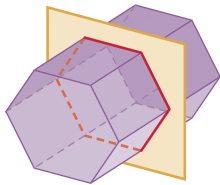


B.

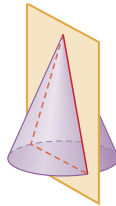


**Guided Practice.** Describe the cross section.

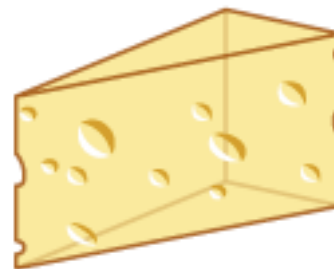
15.



16.



**Video Example 4:** A chef is slicing a triangular prism shaped-piece of cheese for a buffet. How can the chef slice the cheese to make a piece of each shape?



Triangle

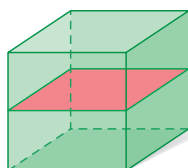
Rectangle

**4 Food Application**

A chef is slicing a cube-shaped watermelon for a buffet. How can the chef cut the watermelon to make a slice of each shape?

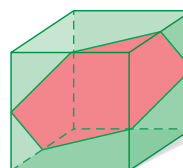


**A** a square



Cut parallel to the bases.

**B** a hexagon



Cut through the midpoints of the edges.

**Example 4.** A piece of cheese is a prism with equilateral triangular bases.  
**How can you slice the cheese to make each shape?**

A. An equilateral triangle

B. A rectangle

**17. Guided Practice.** How can a chef cut a cube-shaped watermelon to make slices with triangular faces?

**11-1 Assignment** (pp 745-748) 13, 15, 17, 18, 19, 21, 22, 23, 28, 34, 36, 37, 38-44.

**Question:** What's the angriest part of 3-D figure?

**Answer:** The cross-section.